

# PATENT COOPERATION TREATY

## PCT



### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 25 OCT 2005

WIPO PCT

Applicant's or agent's file reference IMG/44112PCT1		<b>FOR FURTHER ACTION</b> See Form PCT/IPEA/416	
International application No. PCT/GB2004/002920	International filing date (day/month/year) 07.07.2004	Priority date (day/month/year) 08.07.2003	
International Patent Classification (IPC) or national classification and IPC B41F31/30, B41F13/44, B41F13/56, B41F13/06			
Applicant GOSS GRAPHIC SYSTEMS LIMITED ET AL.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 8 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand  04.02.2005		Date of completion of this report  26.10.2005	
Name and mailing address of the International preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer  Diaz-Maroto y Maqued  Telephone No. +31 70 340-2976 	

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2004/002920

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

**Description, Pages**

1-29 as originally filed

**Claims, Numbers**

1-46 filed with telefax on 09.05.2005

**Drawings, Sheets**

1/16-16/16 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
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**Box No. IV Lack of unity of invention**

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1. ☒ In response to the invitation to restrict or pay additional fees, the applicant has:
- ☐ restricted the claims.
  - ☒ paid additional fees.
  - ☐ paid additional fees under protest.
  - ☐ neither restricted nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
  - ☒ not complied with for the following reasons:  
**see separate sheet**
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☒ all parts.
  - ☐ the parts relating to claims Nos. .

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-46
	No: Claims	
Inventive step (IS)	Yes: Claims	1-42
	No: Claims	43-46
Industrial applicability (IA)	Yes: Claims	1-46
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

**Re Item IV**

**Lack of unity of invention**

1 The separate inventions/groups of inventions are:

- 1) Claims 1-22,38,40-42: A printing unit for a web-offset press
- 2) Claims 23-37,39,40,42: A folder for a web-offset printing press
- 3) Claims 43-46: A web offset printing press

The mere reading of independent claims 1, 23 and 43 shows that there are no features common to those claims at all. Furthermore, none of the technical features of any of those claims function in an equivalent, complementary or cooperative manner nor are they specially adapted to any technical feature of any other invention. Hence, there are no **corresponding** technical features shared by all the claims.

The only single general concept, common only to claims 1 and 27, is the modular construction of the printing unit and the folder. This concept is however neither new nor inventive, as printing units of modular construction are generally known (see for example documents D1 and D2 mentioned below). Therefore, no single general **inventive** concept can be formulated for all the independent claims and thus the groups of inventions mentioned above are not so linked as to form a single general inventive concept (Rule 13.1 PCT).

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

2 Reference is made to the following documents:

- D1 : EP 1 149 694 A (MIYAKOSHI PRINTING MACH) 31 October 2001  
D2 : US 4 955 299 A (OHTA HIROTAKE) 11 September 1990 (1990-09-11)  
D3: US-A-5 775 222 (TREUTHARDT THOMAS ET AL) 7 July 1998 (1998-07-07)

D4: US-A-4 861 326 (KUEHNER RUDOLF ET AL) 29 August 1989 (1989-08-29)  
D5: US-A-6 082 259 (FLUECKIGER MARKUS ET AL) 4 July 2000 (2000-07-04)  
D6: US-A-1 074 699 (DOLL) 7 October 1913 (1913-10-07)

## INVENTION I

- 3 Document D1, which is considered to represent the most relevant state of the art, discloses (cf. paragraphs 23-27 and fig. 1-3) a multi-colour printing unit from which the subject-matter of claim 1 differs in that it comprises means for moving the primary module out from between the secondary modules when the secondary modules are in their non-operative positions and separated from the primary module to enable a second primary module, comprising a plurality of printing couple pairs in which the plate and blanket cylinders are of a different diameter to the diameter of the plate cylinders of the original primary module, to take the place of the original primary module so that the secondary modules can be moved back into an operative position with said second primary module.

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

- 3.1 The problem to be solved by the present invention may be regarded as making easier to change the printed image cut-off.
- 3.2 The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

To change the printed image cut-off, all the cylinders of the primary module must be replaced with cylinders of a different diameter, as proposed in claim 1 through the replacement of the entire primary module. In document D2, which has a different construction, the replacement of single printing couples is disclosed. The person skilled in the art could only find in document D2 the idea of replacing individual printing couples, not the idea of providing means for changing the entire primary module.

- 3.3 The same reasoning applies to independent method claim 17, which includes the corresponding step of moving the primary module out from between the secondary modules when the secondary modules are in their non-operative positions and separated from the primary module.
- 3.4 Claims 2-16, 18-22, 38, and 40-42 are dependent on claims 1 and/or 17 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

## INVENTION II

- 3.5 The document D1 is regarded as being the closest prior art to the subject-matter of claim 23 and shows (the references in parentheses applying to this document):

A folder for a web-offset printing press comprising an upper folder module (30) including at least one former (T) to impart a first longitudinal fold to a continuous web of printed matter passing over the former, a lower folder module (F1) to receive the folded web from the upper folder module (30) and comprising means to cut the web into longitudinal sections and impart a second fold to each section substantially at right angles to the first longitudinal fold.

- 3.6 The subject-matter of claim 23 differs from this known folder in that it further comprises a delivery module comprising means to receive the folded sections from the lower folder module and deliver them for transportation out of the folder, wherein the delivery module is discrete and separable from the lower folder module.

The subject-matter of claim 23 is therefore new (Article 33(2) PCT).

- 3.7 The problem to be solved by the present invention may be regarded as further facilitating the replacement of the lower folder module (which is the module including the cut-off dependent cylinders).
- 3.8 The solution to this problem proposed in claim 23 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

Document D4 discloses a folder having a delivery unit (11 in D4) which is integrated in a delivery module (second module 14 in D4) but comprises also a second longitudinal folding device. Document D4 aims at a module arrangement that may be expanded and developed step by step. Document D4 fails to mention the possibility of easily replacing the lower folder module (13 in document D4), which is not movable. Therefore the person skilled in the art would have no hint to search in document D4 the solution to the problem posed.

- 3.9 The same reasoning applies to independent method claim 17, which includes the corresponding steps of separating the delivery module from the lower folder module, replacing the lower folder module and re-attaching the delivery module to the new lower folder module.
- 3.10 Claims 23-36 and 38-42 are dependent on claims 1 and/or 17 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

### INVENTION III

- 4 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 43-46 does not involve an inventive step in the sense of Article 33(3) PCT.
- 4.1 The document D6 is regarded as being the closest prior art to the subject-matter of claim 43, and discloses (the references in parentheses applying to this document):

A printing press comprising a plurality of print units (for example A,F,E) and a folder (21) located adjacent to the print units, each print unit defining a path for a web of paper that passes through each print unit and into the folder, each print unit comprising means (11) for slitting the web to form a plurality of ribbons and means (7-10) for turning each of said ribbons the same number of times between the print unit and the folder (21) so that each ribbon lies in a parallel plane one above the other as they travel towards and into the folder, wherein the print units are arranged so that all the webs lie in substantially the same plane (see fig. 1a,2) as they pass through their

respective printing units prior to being slit into ribbons.

- 4.2 The subject-matter of claim 43 therefore differs from this known printing press in that it refers to a web-offset printing press, i.e. a specific type of printing press.
- 4.3 Thus, the invention consists merely in the use of a known arrangement in a closely analogous situation (analogous use), whereby this new use does not have to overcome any technical difficulty and does not involve any surprising effect (see PCT Guidelines 13.14 (a)(v), (b)(i) and (b)(ii)).
- 4.4 The additional features of claims 44 and 46 are known from the same document D6 and the additional features of claim 45 only differ from the disclosure of document D6 by the explicit mention to the blanket cylinders of a web-offset printing press. Thus the subject-matter of dependent claims 44-46 lack inventive step for the same reasons as claim 43.



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## Claims

1. A multi-colour printing unit for a web-offset press comprising a plurality of printing couple pairs, each printing couple of said printing couple pairs comprising  
5 a plate and blanket cylinder and each printing couple pair being arranged so as to print a different colour on both sides of a paper web passing between the printing couples of each pair, and an inking system associated with each print couple operable to supply ink to the plate cylinder thereof in an operative position, wherein the printing unit comprises a primary module carrying all the printing couple pairs  
10 and a pair of secondary modules carrying the inking systems, the secondary modules being movable into a non-operative position in which the primary and the secondary modules are separated from each other, characterised by means for moving the primary module out from between the secondary modules when the secondary modules are in their non-operative positions and separated from the  
15 primary module to enable a second primary module, comprising a plurality of printing couple pairs in which the plate and blanket cylinders are of a different diameter to the diameter of the plate cylinders of the original primary module, to take the place of the original primary module so that the secondary modules can be moved back into an operative position with said second primary module.
- 20
2. A printing unit according to claim 1, wherein the primary module is disposed between the pair of secondary modules.
3. A printing unit according to claim 1 or claim 2, wherein the or each  
25 secondary module is slidable in a lateral direction away from the primary module to separate the printing unit into said primary and secondary modules.
4. A printing unit according to claim 3, wherein each of the secondary modules are slideable laterally away from the primary module in opposite directions.
- 30
5. A printing unit according to claim 3 or claim 4, wherein the secondary modules are slideably mounted on a supporting base.

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6. A printing unit according to claim 5, wherein a slide unit is attached to each of the secondary modules for cooperation with a guide track on the supporting base.
- 5 7. A printing unit according to claim 6, wherein the slide unit includes pre-loaded roller bearings that cooperate with a recess on the guide track.
8. A printing unit according to claim 6 or 7, wherein the secondary modules include a carriage to which they are immovably attached, the slide units being  
10 mounted on the carriage.
9. A printing unit according to any of claims 6 to 8, including means for driving said carriage along the track.
- 15 10. A printing unit according to claim 9, wherein the drive means includes a motor drivingly connected to a ball screw mounted to the supporting base and a connecting member on the ball screw attached to the secondary module such that the secondary module slides on the supporting base in response to rotation of the ball screw by the motor.
- 20 11. A printing unit according to claim 10, wherein the motor is connected to the ball screw via a pair of pulleys and a drive belt.
12. A printing unit according to any preceding claim, including a plurality of  
25 additional primary modules, said means enabling the primary module located between the secondary modules to be replaced with a selected one of said plurality of additional primary modules when the secondary modules are moved into their non-operative positions.
- 30 13. A printing unit according to claim 12, comprising a cooperating adjustment mechanism on the primary and secondary modules so that the inking systems adjust to plate cylinders of different diameters when the secondary modules are returned to their operative positions.

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14. A printing unit according to claim 13, wherein said means for moving the primary module includes a slide member on the primary module which cooperates with a guide track attached to a supporting base on which the primary module sits  
5 in an operative position.
15. A printing unit according to claim 14, wherein said means further includes a transfer bogie which cooperates with the or each primary module to push it along the guide track onto a transfer pallet.
- 10 16. A printing unit according to any preceding claim, wherein dampening systems are mounted to each of the secondary units.
17. A method of reconfiguring a multi-colour printing unit for a web-offset  
15 press comprising a plurality of printing couple pairs, each printing couple of said printing couple pairs comprising a plate and blanket cylinder and each printing couple pair being arranged so as to print a different colour on both sides of a paper web passing between the print couples of that pair, and an inking system associated with each print couple operable to supply ink to the plate cylinder thereof in an  
20 operative position, wherein the printing unit comprises a primary module carrying all the printing couple pairs and a pair of secondary modules carrying the inking systems, the method including the step of moving the secondary modules into a non-operative position in which the primary and the secondary modules are separated from each other, characterised by the step of moving the primary module  
25 out from between the secondary modules when the secondary modules are in their non-operative positions and moving a second primary module, comprising a plurality of printing couple pairs in which the plate and blanket cylinders are of a different diameter to the diameter of the plate cylinders of the original primary module, into the position previously occupied by the original primary module and,  
30 moving the secondary modules back into an operative position with the second primary module.

18. A method according to claim 17, wherein the method includes the step of moving the primary module out from between the secondary modules when the secondary modules have been moved into the non-operative position.
- 5 19. A method according to claim 18, wherein the method includes the step of moving the primary module in a direction substantially at right angles to the direction of movement of the secondary modules between their operative and non-operative positions.
- 10 20. A method according to claim 18 or claim 19, wherein the method includes the step of moving a different primary module stored remote from the secondary modules to between the secondary modules and returning the secondary modules to their operative positions with said different primary module.
- 15 21. A method according to claim 20 wherein the printing unit comprises a plurality of different primary modules stored remote from the secondary modules and the method includes the step of selecting one of said different primary modules and moving said selected primary module to between the secondary modules and returning the secondary modules to their operative positions with said selected  
20 primary module.
22. A method according to claims 20 or 21, including the step of replacing the primary module with a primary module carrying plate cylinders of a different diameter to the diameter of the plate cylinders carried by the primary module that is  
25 being replaced.
23. A folder for a web-offset printing press comprising an upper folder module including at least one former to impart a first longitudinal fold to a continuous web of printed matter passing over the or each former, a lower folder module to receive  
30 the folded web from the upper folder module and comprising means to cut the web into longitudinal sections and impart a second fold to each section substantially at right angles to the first longitudinal fold and, a delivery module comprising means to receive the folded sections from the lower folder module and deliver them for

transportation out of the folder, characterised in that the delivery module is discrete and separable from the lower folder module.

24. A folder according to claim 23, wherein the lower folder module is discrete  
5 and separable from the upper folder module.

25. A folder according to claim 24, wherein the lower folder module comprises a frame to which said means are mounted, the frame including cooperating means to releasably attach it to the upper folder module in an operative position.  
10

26. A folder according to claims 24 or 25, wherein the lower folder module is a jaw folder and comprises a collect cylinder, a jaw cylinder and a cutting cylinder.

27. A folder according to claims 24 or 25, wherein the lower folder module is a  
15 rotary folder module and comprises a folding cylinder, second fold rollers and a cutting cylinder.

28. A folder according to claim 27, wherein the diameter of the respective cylinders of each lower folder module are different.  
20

29. A folder according to any of claims 24 to 28, wherein the frame includes means to enable the lower folder module to be moved from its operative position to an off-line storage position.

25 30. A folder according to claim 29, wherein said means for moving the lower folder module includes means to enable a different lower folder module to be located in said operative position in place of the lower folder module.

31. A folder according to claim 29 or 30, wherein the folder includes at least two  
30 lower folder modules, each module movable between the operative position in the folder and an off-line storage position.

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32. A folder according to any of claims 24 to 31, wherein the delivery module comprises a frame and cooperating means to releasably attach the frame to the lower folder module in an operative position.

5 33. A folder according to any of claims 24 to 32, wherein the means in the delivery module to receive the folded sections from the lower folder and deliver them for transportation out of the folder comprises a rotatably mounted paddle wheel.

10 34. A folder according to claim 33, wherein the delivery unit further comprises a stripper and a delivery conveyor to receive folded sections from the paddle wheel and transport them from the folder.

15 35. A folder according to claim 33 or 34, wherein the paddle wheel is rotatably driven by its own motor.

36. A folder according to claim 35, wherein the motor is mounted to the delivery module.

20 37. A method of reconfiguring a folder for a web-offset printing press comprising an upper folder module including at least one former to impart a first longitudinal fold to a continuous web of printed matter passing over the or each former, a discrete lower folder module separable from the upper folder module to receive the folded web from the upper folder module and comprising means to cut  
25 the web into longitudinal sections and impart a second fold to each section substantially at right angles to the first longitudinal fold and, a delivery module comprising means to receive the folded sections from the lower folder module and deliver them for transportation out of the folder, wherein method includes the step of separating the lower folder module from the upper folder module and replacing  
30 the lower folder module with another lower folder module, the method being characterised by the step of separating the delivery module from the lower folder module and re-attaching the delivery module to said other lower folder module.

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38. A printing press including a plurality of printing units according to any of claims 1 to 16.
39. A printing press including a folder according to any of claims 23 to 36.
- 5 40. A printing press according to claim 38 and to claim 39.
41. A method of reconfiguring a printing press comprising a plurality of printing units according to any of claims 1 to 16, using the method steps according to any of  
10 claims 17 to 22 on each printing unit of the press.
42. A method according to claim 41, wherein the printing press includes a folder according to any of claims 23 to 36, the method including the additional step of reconfiguring the folder according to claim 37.
- 15 43. A web-offset printing press comprising a plurality of print units and a folder located adjacent to the print units, each print unit defining a path for a web of paper that passes through each print unit and into the folder, each print unit comprising means for slitting the web to form a plurality of ribbons and means for turning each  
20 of said ribbons the same number of times between the print unit and the folder so that each ribbon lies in a parallel plane one above the other as they travel towards and into the folder, wherein the print units are arranged so that all the webs lie in substantially the same plane as they pass through their respective printing units prior to being slit into ribbons.
- 25 44. A press according to claim 43, wherein the press is configured so that the web passing up through the print unit lies in a plane at right angles to the plane occupied by each of the ribbons as they pass down into the folder.
- 30 45. A press according to claim 43 or 44, wherein the printing unit comprises print and blanket cylinders arranged to rotate about first parallel axes and the folder comprises cylinders arranged to rotate about second parallel axes, the first and second axes being at right angles to each other.

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46. A web-offset press according to any of claims 43 to 45, comprising a plurality of print units each having means for slitting the web passing through a print unit to form a plurality of ribbons and each having means for turning said  
s ribbons so that the ribbons from each print unit lie in a parallel plane one above the other as they travel towards and into the folder.